

What is claimed is:

- 1 1. A voltage control circuit for a common mode voltage,
2 comprising:
3 a detection circuit for detecting a common mode voltage
4 from differential output terminals of a differential output
5 circuit, and outputting a detected voltage based on the common
6 mode output voltage; and
7 an operational transconductance circuit for inputting the
8 detected voltage and a first reference voltage, and
9 inputting/outputting currents based on a voltage difference
10 between the detected voltage and the first reference voltage,
11 wherein the currents inputted/outputted to/from the
12 operational transconductance circuit are inputted/outputted
13 to/from a differential output of the differential output circuit.
- 1 2. The voltage control circuit for the common mode voltage
2 according to claim 1, wherein the first reference voltage is
3 a constant voltage determined in advance.
- 1 3. The voltage control circuit for the common mode voltage
2 according to claim 1, wherein the currents inputted/outputted
3 to/from the operational transconductance circuit are flowed into
4 the differential output to decrease the common mode output
5 voltage from the differential output terminals, and led from
6 the differential output to increase the common mode output
7 voltage from the differential output terminals.
- 1 4. The voltage control circuit for the common mode voltage

2 according to claim 1, wherein the currents inputted/outputted
3 to/from the operational transconductance circuit are
4 inputted/outputted to/from the respective differential output
5 terminals.

1 5. The voltage control circuit for the common mode voltage
2 according to claim 1, wherein the operational transconductance
3 circuit inputs/outputs multiple currents of the same phase, and
4 the respective multiple currents of the same phase are
5 inputted/outputted to/from the respective differential output
6 terminals.

1 6. The voltage control circuit for the common mode voltage
2 according to claim 1, wherein the currents inputted/outputted
3 to/from the operational transconductance circuit are flowed into
4 the differential output terminals when the common mode output
5 voltage from the differential output terminals is larger than
6 a predetermined voltage, and led from the differential output
7 terminals when the common mode output voltage from the
8 differential output terminals is smaller than the predetermined
9 voltage.

1 7. A method for controlling a common mode voltage of a differential
2 output, comprising the steps of:

3 detecting a common mode voltage of differential output
4 terminals;

5 outputting a detected voltage based on the common mode
6 voltage; and

7 inputting/outputting currents to/from the differential
8 output terminals in accordance with a voltage difference between
9 the detected voltage and a first reference voltage.

1 8. The method for controlling the common mode voltage according
2 to claim 7, wherein currents fed back to the differential output
3 terminals are multiple currents of the same phase
4 inputted/outputted to/from the respective differential output
5 terminals.

1 9. The method for controlling the common mode voltage according
2 to claim 7, wherein the currents fed back to the differential
3 output terminals are flowed into the differential output
4 terminals to decrease the common mode voltage from the
5 differential output terminals, and led from the differential
6 output terminals to increase the common mode voltage from the
7 differential output terminals.